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DR. D. W. GRAHAM, Vice President, in the Chair.

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### POSTOPERATIVE ILEUS.

DR. JOHN M. T. FINNEY, of Baltimore, Md., read a paper with the above title (for which see June ANNALS, page 870).

### ADYNAMIC AND DYNAMIC ILEUS.

DR. JOHN B. MURPHY said that he defined ileus not as a pathologic entity, but as a train of symptoms, and that train of symptoms consisted of four essential elements, one or the other preponderating in its influence. These were (1) pain in the abdomen; (2) nausea and vomiting; (3) meteorismus, (4) coprostasis,—that is, a stasis of the intestinal contents, whether it be gas or feces.

He subdivided ileus into three great divisions, namely, adynamic ileus, dynamic ileus, and mechanic ileus. Under adynamic ileus he included all of the conditions that are due to the absence of power of propulsion. Under dynamic ileus he included the two conditions which we recognize, where the obstruction is due to an excess of power, excessive contraction of the muscular wall. Under mechanic ileus he included all the mechanical conditions, whether of the strangulation or obturation variety, which impede the advancement of the contents of the intestinal canal in a mechanical way.

The intestinal tract is a long tube, thirty-odd feet in length, made up of a muscular wall, having flexions or flexures of varying size, and with valves. The function of that tube is not only to absorb and secrete, but to propel its contents, and it is the matter of propelling its contents that really concerns surgeons. In the matter of propulsion, the conditions which contribute to the stasis or to the absence of propulsion, may include four different varieties of conditions. First, those of spinal origin; second, those interfering with the nerve-supply in the mesentery; third, those interfering with the wall of the intestine and the muscle; and, fourth, the infiltration of the muscle itself. Those of spinal origin relate to adynamic ileus. It is not an uncommon experience to see a case of spinal adynamic ileus,—that is, a patient with a fracture of the spine in the upper dorsal region, with an enormously distended abdomen, with the absence of peristalsis, with inability to secure bowel movements by all ordinary means. It is the same as occurs in gunshot wounds; it is the same as occurs in stab wounds at the spine. In that class of cases the differential diagnosis is neither difficult nor of great importance; but in the class of cases involving injuries to the mesentery, where extensive operations have been performed on the mesentery, or where there are extensive transverse wounds of the mesentery of bullet origin, ileus is practically always fatal.

In the removal of tumors from the mesentery—fibromata, myomata, lipomata, or others,—if the greatest care is not exercised in separating the mesentery from the tumors, and in the ligation of the blood-vessels or nerves of the mesentery, a paralytic ileus will be determined which will lead to a fatal termination.

As an example of an afferent nerve lesion, he cited a case seen at the Cook County Hospital many years ago, in which there was a bullet wound in the mediastinum, which did not strike the spine, there was no paralysis of the lower extremities, no injury except in the mediastinum. The patient had a complete paralytic ileus of the entire intestinal tract.

The patient was a policeman who, in following a burglar upstairs, was shot, the bullet having passed in behind the clavicle and downward. When Dr. Murphy saw him on the sixth day after the accident, his abdomen was enormously distended; there was protrusion of his bowel on account of the distention of his

abdomen; his respiration was compromised; there was complete absence of peristalsis. On placing the patient on his left side there was flatness to a certain line; on turning the patient on the opposite side, there was flatness on a certain line, with resonance on the other side. What was the conclusion? It was that the bullet had passed down through the diaphragm and had penetrated either the stomach or intestine, and the peritoneal cavity was full of fluid. A laparotomy was done, and the peritoneum found absolutely free from fluid. When he was turned on the table the fluid in his paralyzed intestine flowed to the most dependent portion. When turned on the other side, with abdomen open, the fluid flowed over the side as it would through a rubber tube, so complete and perfect was the paralysis of his intestine. Strange to say operation cured him. Peristalsis set in within two hours after the operation. He began to have free bowel movements; gas passed off, and he recovered.

Adynamic ileus, correctly so named because it is an absence of power in the intestine, is sometimes referred to under the head of reflex. It is incorporated in the classification given by neurologists as a reflex phenomena; the first of the causes is strangulation of the omentum. How many general practitioners have been called to treat a case of strangulated omentum, with pain, absence of peristalsis, distention of the abdomen, nausea and vomiting, and coprostasis, or inability to get a bowel movement. Every general practitioner has seen such cases. Every surgeon has been confronted with such, where, within the first forty-eight hours, illness comes on, with evidence of obstruction to the lumen of the bowel of mechanical origin, and examination and laparotomy showed there was nothing whatever in the hernial canal but a portion of omentum.

Strangulation of the omentum produces a reflex paralysis of peristalsis. By placing the stethoscope on the abdomen in such a case, the practitioner will find that there is not only an absence of peristalsis in the local area, but an absence of peristalsis over the entire abdomen for a period of time varying from twenty-three or twenty-eight hours to forty-five or forty-eight hours after the strangulation, depending upon its completeness.

Hepatic calculus may be a cause. The term hepatic calculus is used in preference to cystic-duct or gall-bladder calculus. The

colic that occurs with hepatic calculus is difficult to differentiate from mechanical obstruction, because there are present four of the essential features of a mechanical ileus, viz., pain, nausea and vomiting; absence of peristalsis, with distention of the bowel coming on as the result of the paralytic condition, and coprostasis while the pain is severe.

One of the very difficult things to diagnose differentially is the impaction of stone in the cystic duct. When a stone first passes into the cystic duct, the patient has a pain that is colicky in type, with absence of peristalsis, and it is not easy to make a differential diagnosis. A practical point now in connection with the pain of cystic-duct obstruction and the pain of mechanical ileus, is that with the pain of cystic-duct obstruction, there is an absence of rumbling or sound in the peritoneal cavity. With the pain of mechanical obstruction there can be heard borborygmus not only with the stethoscope, but the by-stander can hear it standing at the bedside with the back toward the patient. One is a paralytic ileus stopping the intestinal wave and producing distention, meteorismus, pain, absence of bowel movements by reflex causes, producing reflex paralysis of the intestine; the other, the colic of mechanical ileus; first, a pain that is endeavoring to bombard or remove mechanical obstruction in the wall of the bowel and is accompanied by borborygmus. Renal calculus has less effect upon the muscular activity of the intestinal tract than hepatic calculus, but it still has a considerable effect and is sometimes difficult of differentiation. Ovarian compression is not infrequently diagnosed as mechanical ileus.

The speaker remembered very well having confounded adynamic ileus with diaphragmatic pleurisy, or with the pleurisy of deep lobar pneumonia. Again and again, the surgeon is called to see cases in children in which there is an enormous persistent distention of the belly; pain is complained of over the abdomen; no bowel movements. There is absence of peristalsis; there is the same deathlike stillness when the stethoscope is placed on the abdomen that there is in the other types of paralytic ileus. But there is always present in this class of cases what is never present in primary mechanical obstruction of the intestinal tube, and that is elevation of temperature.

There is another class of cases in which the manifestations

of ileus are very pronounced due to the ligation of pedicles. Since the practice of ligating pedicles *en masse* has ceased, surgeons are having much less vomiting after operations, and fewer cases of paralytic ileus than formerly. The practice of ligating a large pedicle, formerly in vogue, he believed had caused many of those reflex symptoms which had followed operations in the lower part of the abdomen.

Gastric tetany is another condition of reflex ileus or of paralytic ileus that is mistaken for intestinal obstruction. The enormous distention of the stomach to one, two, three, four or five quarts' capacity immediately after operation leads to the belief that the patient has obstruction of the intestine below, when the entire condition is due to over distention of the stomach, and the patient can only be relieved of vomiting, of the distention and distress, by passing a stomach-tube and withdrawing or liberating the enormous quantity of fluid that is accumulated in the stomach.

Peritoneal trauma is another cause of paralytic ileus, and a very important one. The surgeon who produces much peritoneal trauma is certain to have excessive mortality. The peritoneum is a sensitive organ, and every trauma committed in an operation tends to produce distention and paralysis of the intestine after the operation is completed.

The next class of cases which fortunately are not so difficult to differentiate, but which are more common than the mechanical type of ileus, are those in which there is a train of symptoms associated with sepsis. First, with local peritonitis, that is to say, a peritonitis that surrounds the gall-bladder, the appendix, or a tube in its acute manifestations. In the examination of these cases one has for the differential diagnosis the additional significance of temperature. Temperature is always present in the early stages. The paralysis of peristalsis is always present in the early stage of an acute sepsis. In the strangulation stage of appendicitis there are all the manifestations of paralytic ileus—absence of peristalsis, with a colic. In general peritonitis there is a condition which for years was difficult to differentiate from mechanical ileus, the general peritonitis producing obstruction to the bowel in proportion to the infiltration of its wall.

The embolic type of paralytic ileus is due to two causes. First, interference with the nerve supply; and, second, ischemia.

In thrombo-phlebitis there is a slower type of development, where there are abscesses in the veins of the liver and spleen. There is rarely great meteorismus. The rule is a flattened belly, and not a distended abdomen. As symptoms, pain, nausea and vomiting. These occur just the same in the paralytic as in the mechanical obstructions. Meteorismus is as pronounced in the early stage of paralytic, and particularly in the peritoneal or inflammatory type, as it is where there is mechanical obstruction. Coprostasis is the same. Borborygmus is always absent in the paralytic type. Borborygmus is one of the most pronounced manifestations of mechanical obstruction of the intestinal tract, and a stethoscope examination in a case of mechanical obstruction gives more light than a stethoscopic examination of the chest for a lesion of the lung. The absence of sound means, what? Absence of muscular contraction. Mechanical ileus, up to the first, second, third, fourth, and fifth day, has declining frequencies in manifestations of pain or colic; it has declining frequencies in borborygmus; but borborygmus can be excited at any time by massage of the abdominal wall.

Temperature and leucocytosis.—Temperature is never a primary symptom in mechanical ileus, not even in the type presented in children—intussusception. He believed at one time that leucocytosis was going to be of enormous value in the differential diagnosis; that the infective type would show a high leucocyte count, while the mechanical type would show a low leucocyte count. He had been greatly disappointed. He had seen a 36,000 leucocyte count (differential) in mechanical ileus. He had seen a 7,000 leucocyte count in a case of septic peritonitis, so that he had ceased to place any particular value in the differential diagnosis as to the number of leucocytes.

#### STRANGULATION ILEUS.

DR. ARTHUR DEAN BEVAN said that credit was due to Schlange who in 1889 presented a general classification of ileus of great value in a clinical way, the division of ileus into two great groups—paralytic ileus, which covers the ground of dynamic ileus, so-called, or adynamic ileus, and mechanical ileus.

Paralytic ileus essentially means peritonitis or sepsis;

mechanical ileus some mechanical form of obstruction. Schlange went further and made this classification, namely, the division of mechanical ileus into strangulation ileus and obturation ileus. The first question the speaker asked himself, when called to the bedside of a patient with ileus, was, Is this paralytic ileus, is it strangulation ileus, or is it obturation ileus? Because upon a correct diagnosis and classification of the particular case depends an intelligent treatment. Briefly, if it is paralytic ileus, many of the cases are best handled without operation. If it is strangulation ileus, it means absolutely an immediate operation just exactly as a case of strangulated hernia means an immediate operation of a radical type, because in the strangulated form there is not only obstruction of the bowel, but interference with the circulation. If it is obturation ileus, it may or may not mean immediate operation. If it does mean operation, it may mean a lesser operation than the radical removal of the mechanical obstruction at that time, namely, an enterostomy.

Strangulation ileus is best studied from the standpoint of a strangulated hernia. It is a form of ileus which comes on as a strangulated hernia does, with sudden onset, with shock, with pain, with obstruction of the bowel, with vomiting, with later tympany, and, if unrelieved, peritonitis usually, and death. It is, however, at the beginning free from temperature.

The diagnosis, as a rule, can be made early if the surgeon had a clear mental picture of just what strangulation ileus means. It means such a condition as this within the abdomen: A loop of intestine is strangulated as a loop of intestine is strangulated in the scrotum; this very soon becomes paralyzed and distended. There is in almost all cases of strangulation ileus a period at which, if the loop of intestine is of fair size, and the abdominal wall not too thick, the strangulated loop can be determined by the local distention, and the absence of peristalsis. At the same time, in strangulated ileus, there is not a paralysis of the afferent bowel, but the afferent bowel makes a great effort to overcome the obstruction, in that way causing pain, symptoms of peristalsis sometimes visible and invariably the passage or rumbling of gas which can be heard with the stethoscope. If general practitioners are to learn anything about ileus, they must learn how to recognize the difference between those forms which de-

mand immediate operation and those which can be watched for a reasonable length of time in order to confirm the diagnosis. In the strangulation type immediate operation is always indicated.

One word in regard to the character of the operation and the conditions commonly found as the cause of mechanical ileus when the abdomen is opened. First, strangulation from bands. That is the most common type which is met with in mechanical ileus, and as the most common cause an old appendix lesion furnishes most frequently the bands which produce the mechanical obstruction. These bands may be between loops of the bowel or may be a part of the omentum.

As a second frequent cause occurs a Meckel's diverticulum, and it is rather astonishing to find that Meckel's diverticulum is the cause of probably more than five per cent. of cases of intestinal obstruction. It is a very common cause of intestinal obstruction. Just as Meckel's diverticulum can produce obstruction, so also can a long appendix, or adhesions to a tube. The next most common cause is probably volvulus. This, of course, is limited almost entirely to the sigmoid or to the ileum with a long mesentery, and occasionally to the entire transverse colon.

Of the internal hernias commonly met with, may be cited especially small hernias which give no evidence of their existence from external examination, at the common positions of hernia such as those in which the hernias are engaged in the femoral ring, in the internal inguinal ring, at the umbilicus, and hernias in unusual positions, such as the obturator foramen, the sciatic foramen, etc.

The forms of ileus which are described as due to strangulation in the retroperitoneal fossæ are quite infrequent. They do occur, however, and must be kept in mind. Cases occurring in the intersigmoid fossa, in the pericecal fossa, in the duodenal fossa, in the foramen of Winslow, are rather rare surgical curiosities, and no one has had any considerable experience with strangulation due to hernias of this type. Strangulation ileus may occur from rents in the mesentery and omentum and other abdominal organs, as, for instance, a rent in the uterus. Occasionally a case is reported in this last group of rupture of the uterus, with a knuckle of bowel, or loop of bowel, passing through the rupture, the rent being caused sometimes by an abortion. Sometimes



injuries of the uterus after curettage will be the cause of such an obstruction.

Dr. Murphy has included under the paralytic form of ileus thrombosis and embolism of the mesenteric vessels. Possibly he is right. In many classifications, however, this is included under the strangulation variety, because of interference with the circulation. Personally he had not met such a case. They are rare. Dr. McArthur had one such case comparatively recently in which the superior mesenteric artery was involved, and all the small intestines which are supplied by the superior mesenteric ganglia were black or gangrenous. The patient of course died as the result of the lesion. The lesion is either an endarteritis or embolism from some cardiac valve lesion, or a thrombus of a mesenteric vein from sepsis or from traumatism. There is a rather interesting anatomical fact in connection with a thrombus or embolism of the superior mesenteric artery and vein, namely, that either of these vessels is capable of producing by its being blocked up gangrene of the entire small intestine supplied by them. If, however, the lesion which produces obliteration of the vessel takes place slowly as a gradually-growing tumor, this does not necessarily follow. There are a few cases on record where the inferior mesenteric has been able to take care of the blood-supply of the entire intestinal tract, where the superior mesenteric has been gradually blocked, without resulting gangrene and resulting ileus.

As to strangulation ileus. The proper treatment of a case by the medical men is the making of an immediate diagnosis, and then urging immediate operation. There can be no doubt of it. Case after case of mechanical ileus dies because an early diagnosis was not made, because early operation was not done, but in which early diagnosis and early operation would have saved life. The same is true of strangulated hernia. How many patients with strangulated hernia would die if they were operated on two or three hours after strangulation? Not a much larger per cent. than from the operation for radical cure of hernia. The same thing is almost true of strangulation ileus if it is operated on in the first few hours after the attack. When the patient has this sudden onset, with a picture of shock resembling that of a strangulated hernia, he demands immediate operation. In fact, any medical treatment

of the individual is a waste of time. Nothing but an immediate operation is indicated. It is the only hope and it gives a patient much hope. What do the figures show? If operated on forty-eight hours after strangulation has taken place, the prognosis is bad; between twenty-four and forty-eight hours, the prognosis is fair; inside of twenty-four hours the prognosis is good. That is the key to the situation. The operative treatment for strangulation ileus is the radical removal of the strangulation in the early cases. In the late cases,—and we find unfortunately we are confronted not infrequently with cases in the late stages, where the abdomen is distended, where the patient is septic, where there is evidence of peritonitis,—radical operation is out of question, and the operation which should be done under gas anæsthesia or Schleich infiltration anæsthesia, is an enterostomy, with a glass tube inserted into the first distended loop of the bowel, usually in the right flank, and held in position by a pursestring suture which will wall off and prevent infection until plastic inflammation prevents any extension to the general peritoneal cavity. Undoubtedly, enterostomy offers considerable hope even in these late cases, and is the operation of choice rather than a radical procedure.

#### OBTURATION ILEUS.

DR. WM. E. SCHROEDER said that in the classification of Schlange, obturation ileus, in its broadest sense, includes compression from without, strictures, both benign and malignant tumors in the lumen of the intestine, intussusception, and the usual obturation forms, namely, from gall-stones, enteroliths, foreign bodies, and fecal masses.

The nature of the obstruction consists in the simple closure of the lumen of the intestine, either primarily from within, or through compression from without.

Under the special causes of obstruction may be mentioned carcinoma, which is commonly situated in the colon or the rectum, and when found producing ileus appears as a narrow shrinking ring, which macroscopically looks like a cicatrix, and is only to be recognized microscopically as the product of a shrinking carcinoma, or a more or less proliferating nodular mass.

Sarcomas and lymphosarcomas do not, as a rule, even narrow the lumen of the intestine. Schlange extirpated a spindle-celled

sarcoma, the size of a fist, which arose from the submucosa of the ileum, having a short pedicle.

The tumor had become twisted on its own axis, producing an occlusion.

There are certain processes (tuberculosis, syphilis, etc.) which give rise to ulceration of the mucous membrane, resulting in a cicatrix and causing strictures. Tuberculosis is by far the most common, after which comes syphilis, usually located in the rectum.

Trauma may lead to a contusion of the intestine, producing a local gangrene, and later a stricture. Such cases are mentioned by Noack and Menne. Less frequently they follow dysentery and stercorary ulcers.

Strictures of a severe degree are mentioned by Treves occurring three times in the ileum and once in the jejunum, which had been incarcerated in hernial sacs, the incarcerating ring producing a stricture may follow, and the same may be said of resection formation of a stricture.

After the discharge of the intussusciptions in intussusception, a stricture may follow, and the same may be said of resection of the intestine.

Again, in the new-born infant a narrowing can occur at a point where the omphalo-mesenteric duct was inserted, the thick tenacious meconium becoming lodged and producing a stricture.

A most important part is played by adhesions following peritonitis, producing a kinking which may cause an obstruction, or simply favor the lodging of fecal matter there which in time completes the obstruction.

Of the tumors which develop from neighboring organs producing a compression, those arising from the uterus and ovary are by far the most common, yet examples are known of tumors arising from the kidney, spleen, mesentery and pelvic bones which have produced obstruction by compression.

In the strictest sense of the term, the occlusion of the intestinal lumen is produced by free bodies in the lumen, such as gall-stones, enteroliths, foreign bodies and fecal masses.

The gall-stones do not necessarily pass through the common duct, but they frequently pass through fistulæ between the bile-tracts and intestine, and into the duodenum and colon. Occa-

sionally, small stones, after remaining a long time in intestinal diverticula, may grow to enormous size by deposits of phosphate salts, and thus produce obstructions.

As a general rule, stones producing obstructions are larger than a walnut, but very small stones may produce severe disturbances. The prolonged stay of a stone in one place may produce a necrosis and ulceration of the mucous membrane, peritonitis and perforation. The stones may become lodged in any portion of the small intestine, the last and most important obstacle being the ileocæcal valve.

The enteroliths (which are rare) form very gradually in the large intestine, especially in the cæcum. Quite commonly, some foreign body forms the nucleus for their formation. To the enteroliths belong also those masses composed of undigested food,—vegetables, hair, etc.

The foreign bodies which get into the intestine are many and varied, and usually pass without much disturbance. Should they strike a stricture which up to this time had passed unnoticed, they may lodge and produce an acute obstruction. If they are sharp, a perforation of the intestine, with peritonitis, may follow.

In cases suffering from habitual constipation, because of sluggish intestinal innervation, the solid fecal masses may become so large as to obstruct the intestine mechanically.

Obturation ileus is sometimes produced by an intussusception. The ileocæcal valve is by far the most common seat for this lesion. Then follows the small intestine, and, lastly, the colon. The length of the intussusception may vary from a small piece to many feet.

Thus Schlange observed a case of the ileocæcal variety where the valve presented itself beyond the anus.

The invagination of the large intestine usually occurs in the sigmoid.

Of special interest in invagination in general is the condition of the mesentery. Inasmuch as it follows the invaginated portion, it produces traction on the intussusciens and curves it, so that it looks toward the mesenterial insertion. At the same time the invagination turns, thus approaching the spine. The longer the invagination, the more characteristic this will be.

Circulatory disturbances usually follow in the invaginated

mesentery, depending upon the length of time and the extent of the invagination.

A more or less severe hyperemia develops in the intussusciens and its mesentery, followed by œdema.

If the stasis continues, hæmorrhage into the tissues and the lumen of the gut will follow. Where the obstruction is only partial, and the circulation not completely interrupted, leaving the lumen of the gut partially open, a chronic course will follow.

Where the circulation is completely interrupted, the course will be acute, followed by gangrene of the intussusciens, which may be cast off. These pieces vary in length from a few centimetres to three metres. Thus, Lichtenstern found that the separation occurred in the majority of cases during the first month, but several times only after six months or even later.

The acute dangers of this disease lie in perforation of the intestine at the neck of the invagination, and secondary peritonitis.

In the chronic forms emaciation threatens the life of the patient. Even though the intussusciens has been cast off, a stricture may follow which can interfere with the recovery of the patient.

Symptoms; Acute Forms.—Whenever the lumen of the gut is completely obstructed by some foreign body, the onset is sudden and consists of acute pain in abdomen, distention, increased peristalsis, nausea and vomiting (possibly becoming fecal), and possible absence of bowel movements. From constant pressure of such a body on the intestinal wall, perforation and secondary peritonitis may follow.

In acute intussusception with complete obstruction, the symptoms are similar, excepting that here, when bowel movements occur, bloody mucus will be found. So long as there is no general peritonitis, the upper part of the intestine will be distended, and the lower portion collapsed. Peristalsis will be present in varying degrees of intensity, being especially severe in the chronic types because of the gradual hypertrophy of the musculature from use.

More commonly in obturation ileus the onset is not sudden, because the obstruction is not complete, because if it is due to a foreign body, it may be constantly moving. Should there be a stricture or adhesions of which the patient may be entirely una-

ware, a foreign body or fecal mass may lodge and cause a sudden occlusion of the gut.

In the more chronic type, this entire group may be observed, but they are slow in developing.

*Diagnosis.*—There are certain peculiarities of this disease to which there are many exceptions. First, absence of intense initial and continued pain. Second, absence of symptoms of collapse. The representative cases are those which come on gradually, as in chronic intestinal narrowing, which ultimately leads to complete occlusion. The general diagnosis of ileus is, as a rule, not difficult, but the special diagnosis may be not only difficult but impossible.

In many instances, a careful history will not only give us a clew, but make the diagnosis of the cause of the obstruction. Thus, a history of having swallowed a foreign body or of having had a non-absorbable foreign body introduced during a resection of the intestine, or a history of a former abdominal injury which might lead to adhesions or stricture, favoring a sudden lodgment of foreign or fecal matter.

Previous history of gall-stones might give us a clew suggesting the lodgment of a gall-stone in the intestine. The slow onset, and steadily increasing symptoms, might suggest the presence of tubercular or syphilitic strictures or tumors.

His own experience in attempting to diagnose the *cause* of an ileus has been more or less of a failure, for ample reasons. In the first place, it constantly happens that a beginning peritonitis clouds the diagnosis so successfully that it is almost impossible, especially with the frequent poor histories obtainable, to distinguish between a paralytic and a mechanical ileus, and as to making a special diagnosis, there are so many possibilities of internal strangulation alone, from which obturation ileus must be distinguished, that it can rarely be done excepting with the aid of a good history.

Errors in diagnosis are not at all uncommon. Thus, in the case of a man at the Cook County Hospital who could give no history whatever because of his inability to either talk or understand the English language. On examination, his temperature was 101°, pulse 100; abdomen tender; some tympany; a little free fluid was present; vomiting frequently; no peristalsis. He

had an irreducible left-sided inguinal hernia, which was about the size of an adult fist, and very tender to the touch. He had worked until the day before his entrance to the hospital. He was not emaciated; no signs of cachexia.

The speaker operated on his hernia, and found that it was not a strangulation, but merely an incarceration. During the operation, considerable fluid ran from the abdominal cavity, which had a very distinct coffee odor. The hernia was repaired and a drain inserted. The abdomen opened in median line above umbilicus, and a small carcinoma, which had perforated, situated on the anterior wall of stomach, was found. The opening was plugged with a piece of omentum, and the abdominal wound closed, with drain. The patient died the following day.

In another case the diagnosis of a left-sided diaphragmatic hernia was made. The patient's temperature was  $97^{\circ}$ ; he was in a partial stage of collapse; extremely anxious and pale; pulse was 140; excruciating pain in left diaphragmatic region. Nausea and vomiting. After examination, all the findings of such a hernia were absent; no operation was undertaken, because it seemed as though the patient might have the beginning of some other disease, which proved to be the case the next morning. He had all the findings of a pericarditis, and after a variable course recovered.

Treatment.—In obturation ileus, enterotomy is of especial value, in relieving the intestine of its poisonous contents, and because of the simplicity of the operation. A radical operation may follow at some future time, when the patient may be in better condition.

In strangulation ileus, it is necessary to relieve the strangulated intestine, and save it from gangrene, or to resect the gangrenous portion. In general, it may be said that the cases of ileus come into the hands of the surgeons much too late. Many general practitioners wait for fecal vomiting before they transfer the case.

#### THE ABUSE OF CATHARTICS IN OBSTRUCTION OF THE BOWELS.

DR. M. L. HARRIS said that it is one of the rarest things in the world for a surgeon to be called in to operate on a case of ileus that has not run the gauntlet of the whole list of cathartics,

in the vain hope that one would at last be found which would stay down long enough to in some magic way loosen the Gordian Knot and bring about a bowel movement, so that even though the patient die as a result he will at least have died cured.

The reasons why physicians so frequently err in this regard are chiefly two, namely imperfect knowledge of the pathology of these cases, and incorrect diagnosis.

The physician is called to see a patient who has a pain in the abdomen with nausea or perhaps vomiting, slight distention, some tenderness and no bowel movement. An inquiry is immediately made as to what has been eaten. This is found to have been some sausage, or pancakes, or something else which had been eaten a hundred times before without inconvenience, but now it is looked upon as the offending agent and a physic is prescribed to carry it off. No result following, other and more powerful physics are brought into service as the vomiting of the patient and the frenzy of the physician to secure a bowel movement increase, until it finally dawns upon the doctor that the trouble is not that the bowels do not move, but the bowels do not move because there is some trouble.

The speaker recently saw a patient suffering from a strangulated inguinal hernia, with an enormous abdomen and vomiting every few minutes, who was still trying to get his physic down between vomits, and another with acute appendicitis where the attendant wondered why no result followed the cathartics, in which an operation disclosed a very large opening in the cæcum left by the sloughing off of the appendix and through which the intestinal contents chased by the cathartics had escaped into the abdominal cavity.

Numerous other cases illustrating all the varieties of intestinal obstruction could be mentioned did time permit, but the purpose here is merely to call attention to the harm which results from the administration of cathartics in these cases.

In all varieties of strangulation obstruction in which are included all varieties of herniæ, external and internal; strangulation by bands; adhesions; kinking; volvulus; intussusception, etc., it will be perfectly apparent to every one that cathartics cannot possibly do any good, but are always productive of harm. Yet one scarcely ever sees a case belonging to this class that has



not been dosed repeatedly with cathartics, much to the detriment of the patient, before a diagnosis has been made, sometimes even after.

In dynamic obstruction whether of the paralytic or spastic variety, it is practically impossible to force anything along the affected portion of the bowel so long as the condition persists.

Whenever a portion of the bowel is paralytic and distended or spastically contracted, the intraintestinal current is almost as effectually blocked as it is when a loop of bowel is strangulated in a hernial ring. There is this great difference however. The paralytic or the spastic bowel may and usually does recover under appropriate treatment, while the strangulated bowel is rapidly and surely advancing to certain death unless it be relieved by an operation.

The acute inflammatory affections, such as appendicitis, cholecystitis, pancreatitis, salpingitis, sigmoiditis, etc., which begin as more or less circumscribed conditions, form a very important class in this connection.

In many of these cases bowel movements are temporarily but completely suspended owing to the fact that the loops of bowel adjacent to, and involved in, the inflammatory process are paralyzed, and at times fixed by the first plastic exudate which is thrown out. The purpose of all this is a conservative one, namely, to circumscribe the focus of infection.

The exhibition of cathartics under these circumstances can produce only a harmful effect by breaking down the protecting plastic wall and extending or disseminating the infectious material.

Whenever the bowels are incapable of acting by reason of any of the obstructing causes above mentioned, cathartics, by stimulating in vain the peristalsis of, and increasing the amount of fluid in, the proximal portion of the bowel, favor intestinal putrefaction with absorption of toxic products; cause a reverse flow of foul offensive fluid into the stomach with the production of exhausting vomiting; so damage the bowel immediately cephalad of the obstruction as to favor the migration of microbes into and through its walls; increase an intussusception; hasten the cutting through of a constricting band or ring; aid in the extension of paralysis; facilitate the dissemination of infection,

and in fact, do infinitely more harm in less time than could possibly have resulted from the primary trouble had it been left undisturbed. These facts, which rest on sound reasoning, accurate pathology and clinical experience, cannot be too strongly emphasized.

Cathartics should never be given to a patient suffering of an acute abdominal trouble until a diagnosis has been made, or if not an accurate diagnosis, at least until all of the conditions mentioned which may produce obstruction, have been positively excluded, and let it always be remembered that these patients are never sick because the bowels do not move, but the bowels do not move because they are sick.